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<p>Substitute for form 1449A-PTO</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p style="text-align: center; font-size: 0.8em;">(USE AS MANY SHEETS AS NECESSARY)</p> <div style="border: 1px solid black; display: flex; justify-content: space-between; width: 100%; margin-top: 10px;"> Sheet 1 Of 8 </div>	<p style="text-align: center; font-weight: bold;">COMPLETE IF KNOWN</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Application Number</td> <td>10/078,474</td> </tr> <tr> <td>Filing Date</td> <td>2-21-02</td> </tr> <tr> <td>First Named Inventor</td> <td>Ho Ki Kwon</td> </tr> <tr> <td>Art Unit</td> <td>2828</td> </tr> <tr> <td>Examiner Name</td> <td>Dung T. Nguyen</td> </tr> <tr> <td>Attorney Docket Number</td> <td>H0002769</td> </tr> </table>	Application Number	10/078,474	Filing Date	2-21-02	First Named Inventor	Ho Ki Kwon	Art Unit	2828	Examiner Name	Dung T. Nguyen	Attorney Docket Number	H0002769
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First Named Inventor	Ho Ki Kwon												
Art Unit	2828												
Examiner Name	Dung T. Nguyen												
Attorney Docket Number	H0002769												

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code* (if known)			
DWN		US 4445218		04-24-1984	Coldren	
		US 4608697		08-26-1986	Coldren	
		US 4622672		11-11-1986	Coldren et al.	
		US 4829347		05-09-1989	Cheng et al.	
		US 4873696		10-10-1989	Coldren et al.	
		US 4896325		01-23-1990	Coldren	
		US 5045499		09-03-1991	Nishizawa et al.	
		US 5082799	A	01-21-1992	Holmstrom et al.	
		US 5245622	A	09-14-1993	Jewell et al.	
		US 5251225	A	10-05-1993	Eglash et al.	
		US 5293392	A	03-08-1994	Shieh et al.	
		US 5343487	A	08-30-1994	Scott et al.	
		US 5358880	A	10-25-1994	Lebby et al.	
		US 5365540	A	11-15-1994	Yamanaka	
		US 5392307	A	02-21-1995	Sugiyama et al.	
		US 5416044	A	05-16-1995	Chino et al.	
		US 5422901	A	06-06-1995	Lebby et al.	
		US 5468343	A	11-21-1995	Kitano	
		US 5491710	A	02-13-1996	Lo	
		US 5513204	A	04-30-1996	Jayaraman	
		US 5568504	A	10-22-1996	Kock et al.	
		US 5588995	A	12-31-1996	Sheldon	
		US 5631472	A	05-20-1997	Cunningham et al.	
		US 5693180	A	12-02-1997	Furukawa et al.	
		US 5719891	A	02-17-1998	Jewell	
	US 5719894	A	02-17-1998	Jewell et al.		

Examiner Signature		Date Considered	05/17/04
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EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.01. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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pw		US 5719895	A	02-17-1998	Jewell et al.
		US 5729567	A	03-17-1998	Nakagawa
		US 5732103	A	03-24-1998	Ramdani et al.
		US 5747366	A	05-05-1998	Brillouet et al.
		US 5754578	A	05-19-1998	Jayaraman
		US 5757833	A	05-26-1998	Arakawa et al.
		US 5805624	A	09-08-1998	Yang et al.
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		US 5818862	A	10-06-1998	Salet
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		US 5877038	A	03-02-1999	Coldren et al.
		US 5883912	A	03-16-1999	Ramdani et al.
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		US 5912913	A	06-15-1999	Kondow et al.
		US 5943357	A	08-24-1999	Lebby et al.
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		US 5960018	A	09-28-1999	Jewell et al.
		US 5974073	A	10-26-1999	Canard et al.
		US 5978398	A	11-02-1999	Ramdani et al.
		US 5985683	A	11-16-1999	Jewell
		US 5991326	A	11-23-1999	Yuen et al.
		US 6021147	A	02-01-2000	Jiang et al.
		US 6046065	A	04-04-2000	Goldstein et al.
		US 6049556	A	04-11-2000	Sato
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		US 6057560	A	05-02-2000	Uchida
		US 6061380	A	05-09-2000	Jiang et al.

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Sheet 3 of 8

COMPLETE IF KNOWN

Applicati n Number 10/078,474
Filing Date 2-21-02
First Named Inventor Ho Ki Kwon
Group Art Unit 2828
Examiner Name Dung T. Nguyen
Attorney Docket Number H0002769



dw	US 6061381	A	05-09-2000	Adams et al.	
	US 6121068	A	09-19-2000	Ramdani et al.	
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	US 6226349	B2	04-25-2003	Cox et al.	
	US 6252896	B1	06-26-2001	Tan et al.	
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	US 6372533	B2	04-16-2002	Jayaraman et al.	
	US 6424669	B1	07-23-2002	Jiang et al.	
	US 6434180	B1	08-13-2002	Cunningham	
	US 6542530	B1	04-01-2003	Shieh et al.	
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	US 6580741	B2	06-17-2003	Jiang et al.	
	US 6603784	B1	08-05-2003	Johnson	
	US 6621842	B1	09-16-2003	Dapkus	
	US 6621843	B2	09-16-2003	Yoo et al.	
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	US 2002/ 0131462	A1	09-19-2002	Line et al.	
	US 2003/ 0086463	A1	05-08-2003	Shin et al.	
	US 2003/ 0053510	A1	03-20-2003	Yuen et al.	
	US 2003/ 0103543	A1	06-05-2003	Moser et al.	
	US 2003/ 0118067	A1	06-26-2003	Johnson	

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FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
23	✓	EP	0 740 377	A1	10-30-1996	Hewlett-Packard Company		
	✓	EP	0 740 377	B	10-30-1996	Hewlett-Packard Company		
	✓	EP	0 765 014	A1	03-26-1997	France Telecom		
	✓	EP	0 765 014	B1	07-28-1999	France Telecom		
	✓	EP	0 822 630	A1	02-04-1998	Hewlett-Packard Company		
	✓	EP	0 874 428	A2	10-28-1998	Motorola, Inc.		
	✓	EP	0 874 428	A3	11-04-1998	Motorola, Inc.		
	✓	EP	0 874 428	B1	15-04-1998	Motorola, Inc.		
	✓	EP	0 975 073	A1	01-26-2000	NEC Corporation		
	✓	EP	0 999 621	B1	11-04-1999	Jayaraman et al.		
	✓	EP	1 294 063	A1	03-19-2003	Avalon Photonics AG		
	✓	JP	57026492	A	02-12-1982	NEC Corp.		
	✓	WO	98/007218	A1	02-19-1998	W.L. Gore & Associates, Inc.		
	✓	WO	00/033433	A2	06-08-2000	Arizona Board of Regents		
	✓	WO	00/033433	A3	06-08-2000	Arizona Board of Regents		
	✓	WO	00/038287	A1	06-29-2000	Honeywell, Inc.		
	✓	WO	00/052789	A2	02-29-2000	The Regents of the University of California		
	✓	WO	00/052789	A3	02-29-2000	The Regents of the University of California		
	✓	WO	00/065700	A2	11-02-2000	Gore Enterprise Holdings, Inc.		
	✓	WO	00/065700	A3	11-02-2000	Gore Enterprise Holdings, Inc.		
	✓	WO	01/016642	A2	03-08-2001	Agility Communications		
	✓	WO	01/016642	A3	03-08-2001	Agility Communications		
	✓	WO	01/017076	A2	03-08-2001	The Regents of the University of California		

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m	✓	WO 01/017076 A3	03-08-2001	The Regents of the University of California		
	✓	WO 01/018919 A1	03-15-2001	The Regents of the University of California		
	✓	WO 01/024328 A2	04-05-2001	Agility Communications		
	✓	WO 01/024328 A3	04-05-2001	Agility Communications		
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	✓	WO 01/052373 A2	07-19-2001	Infineon Technologies Ag		
	✓	WO 01/052373 A3	07-19-2001	Infineon Technologies Ag		
	✓	WO 01/084682 A2	11-08-2001	Agility Communications, Inc.		
	✓	WO 01/093387 A2	12-06-2001	Sandia Corporation		
	✓	WO 01/093387 A3	12-06-2001	Sandia Corporation		
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	✓	WO 01/098756 A2	12-27-2001	The Regents of the University of California		
	✓	WO 02/003515 A2	01-10-2002	Agility Communications, Inc.		
	✓	WO 02/017445 A1	02-28-2002	The Regents of the University of California		
	✓	WO 02/084829 A1	10-24-2002	Cielo Communications, Inc.		
	✓	WO 03/052797 A1	06-26-2003	Jiang et al.		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
m	✓	International Search Report, dated 08-09-2003, relative to PCT application No. PCT/US 03/05368, the foreign equivalent to the instant U.S. application 10/078,474	
	✓	AKIYAMA, Y., et al., "Growth of High Quality GaAs Layers on Si Substrates by MOCVD". 1986, Journal of Crystal Growth, pp. 490-497.	
	✓	ALMUNEAU, G., et al., "Accurate control of Sb composition in AlGaAsSb alloys on InP substrates by molecular beam epitaxy", article, May 6, 1999, pgs 113-6, Vol. 208, Journal of Crystal Growth.	
	✓	ALMUNEAU, G., et al., "Improved electrical and thermal properties of InP-AlGaAsSb Bragg mirrors for long-wavelength vertical-cavity lasers", article, Oct 2000, pgs 1322-4, Vol. 12, No. 10, IEEE Photonics Technology Letters.	
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	✓	ANAN, T., et al., "Continuous-wave operation of 1.30 μm GaAsSb/GaAs VCSELs", article, Apr 26, 2001, pgs 566-7, Vol. 37, No. 9, Electronics Letters.	

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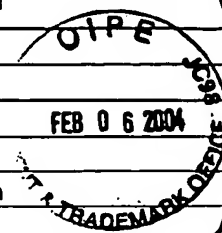
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet	6	Of	8
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COMPLETE IF KNOWN

Application Number	10/078,474
Filing Date	2-21-02
First Named Inventor	Ho Ki Kwon FEB 06 2004
Group Art Unit	2828
Examiner Name	Dung T. Nguyen
Attorney Docket Number	H0002769



✓	BLACK, K., et al., "Double-fused 1.5 μm vertical cavity lasers with record high T_0 of 132K at room temperature", article, Oct 1, 1998, pgs 1947-9, Vol. 34, No. 20, Electronics Letters.	
✓	BLUM, O., et al., "Electrical and optical characteristics of AlAsSb/BaAsSb distributed Bragg reflectors for surface emitting lasers", article, Nov 27, 1995, pgs 3233-5, Vol. 67, No. 22, Applied Physics Letters.	
✓	BLUM, O., et al., "Highly reflective, long wavelength AlAsSb/GaAsSb distributed Bragg reflector grown by molecular beam epitaxy on InP substrates", article, Jan 16, 1995, pgs 329-31, Vol. 66, No. 3, Applied Physics Letters.	
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✓	BOUCART, J., et al., "Optimization of the Metamorphic Growth of GaAs for long wavelength VCSELs", 1999, pp. 1015-1019, Journal of Crystal Growth 201/202.	
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✓	CHANG, C., et al., "Parasitics and design considerations on oxide-implant VCSELs", article, Dec 2001, pgs 1274-6, Vol. 13, No. 12, IEEE Photonics Technology Letters.	
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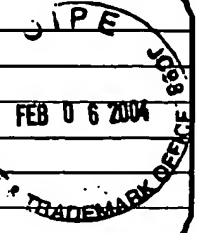
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Sheet 72 Of 8

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Application Number 10/078,474
Filing Date 2-21-02
First Named Inventor Ho Ki Kwon
Group Art Unit 2828
Examiner Name Dung T. Nguyen
Attorney Docket Number H0002769



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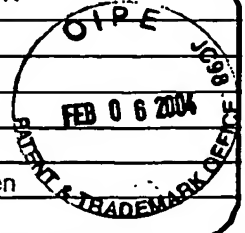
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First Named Inventor	Ho Ki Kwon
Group Art Unit	2828
Examiner Name	Dung T. Nguyen
Attorney Docket Number	H0002769



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